

GOLF BALL WITH ILLUMINATION MEMBER THEREIN AND METHOD
FOR MAKING THE SAME

FIELD OF THE INVENTION

The present invention relates to a golf ball and a method for making the
5 golf ball which has an illumination member therein which is activated by an impact.

BACKGROUND OF THE INVENTION

A conventional golf ball includes a core and an outer layer which includes
dimples in an outer periphery thereof. The outer layer of the conventional golf balls
is made by white color material so that it is visible from a distance. Nevertheless, the
10 white golf ball is not bright enough to be played in a dark area. Although some golf
balls has an electronic device received in the golf ball such that it illuminates in the
dark, the wires of the electronic device are easily broken when the golf ball is hit
which usually in a range between 1000 to 2000 Kg force. The conventional golf ball
is composed of two layers and the hardness of the outer layer is in a range between
15 Shore hardness 41 to 68D. For a golf ball with a harder outer layer having Shore
hardness 62D to 68D, the impact feed back could hurt the player and the wires of the
electronic device are easily broken. For a golf ball with a soft outer layer having
Shore hardness 48D to 61D, the impact deforms the golf ball and could transfer a
huge impact to the electronic device.

20 The present invention intends to provide a method for making a golf ball
that is composed of three layers including the core and an illumination member is
received in the core.

SUMMARY OF THE INVENTION

The present invention relates to a method for making a golf ball and comprises the following steps:

step 1: placing an illumination member on a rack;

5 step 2: installing the rack with the illumination member in a lower mold;

step 3: mounting an upper mold onto the lower mold and pouring thermo-setting or thermo-plastic translucent resin in a space between the upper mold and the lower mold to form a core which encloses the illumination member therein;

step 4: enclosing the core by a mediate layer, and

10 step 5: enclosing the mediate layer by an outer layer which includes dimples.

The present invention will become more obvious from the following description when taken in connection with the accompanying drawings which show, for purposes of illustration only, a preferred embodiment in accordance with the
15 present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a cross sectional view to show the golf ball made by the method of the present invention;

Fig. 2 is an exploded view to show the upper mold, the illumination
20 member, the rack and the lower mold used in the method of the present invention;

Figs. 3 and 3-1 show perspective view and the cross sectional view of the combination of the upper mold, the illumination member, the rack and the lower mold;

Fig. 4 shows the core in which the illumination member is received,
wherein extensions extending from the core;

Fig. 5 shows the core in which the illumination member is received;

Fig. 6 shows the core is enclosed by a mediate layer;

5 Fig. 7 is a perspective view to show the golf ball of the present invention;

Fig. 8 shows the diagrams of the steps of the method of the present
invention;

Fig. 9 is a cross sectional view to show that the extensions on the core are
not removed and enclosed by the mediate layer, and

10 Fig. 10 shows the diagrams of the steps of the method of the present
invention, wherein the extensions on the core are not removed.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to Figs. 1 to 8, the method for making a golf ball "A" of the
present invention comprises the following steps:

15 step 1: placing an illumination member 30 on a rack "B" which has legs
extending radially therefrom;

step 2: installing the rack "B" with the illumination member 30 in a lower
mold "C" which has recesses for receiving the legs of the rack "B";

20 step 3: mounting an upper mold "D" onto the lower mold "C" and pouring
thermo-setting or thermo-plastic translucent resin into a space between the upper
mold "D" and the lower mold "C" via a pouring passage "d" to form a core 40 which
encloses the illumination member 30 therein;

step 4: removing extensions 41 extending from the core 40 wherein the legs of the frame "B" are received in the extensions 41;

step 5: enclosing the core 40 by a mediate layer 50, and

5 step 6: enclosing the mediate layer 50 by an outer layer 60 which includes dimples.

It is to be noted that the resin for the core 40 is solidified under the temperature less than 80 degrees Celsius and the pressure less than 3 kg/cm so as to avoid from damaging the illumination member 30 in the core 40. The resin for the core 40 bears a temperature higher than 220 degrees Celsius and the pressure higher
10 than 120 kg/cm. The outer layer 60 is made of translucent resin and required to have features which bears impact under lower temperature such as 40 degrees below zero Celsius.

Figs. 9 and 10 show another related method wherein the extensions 41 extending from an outer periphery of the core 40 are maintained so as to reinforce
15 connection between the core 40 and the material of the mediate layer 50.

While we have shown and described the embodiment in accordance with the present invention, it should be clear to those skilled in the art that further embodiments may be made without departing from the scope of the present invention.